thereon and said third electrode having a third electrode assay reagent immobilized thereon.

5. The method according to claim 4 wherein said second electrode assay reagent and said third electrode assay reagent are binding reagents each specific for a different analyte of interest.

6. The method according to claim 1 wherein said plurality of electrodes are arranged within a flow cell, said flow cell having a flow cell path.

7. The method according to claim 6 wherein said plurality of electrodes are arranged sequentially.

8. The method according to claim 1 wherein said first electrode is adjacent said second electrode and said second electrode is adjacent said third electrode.

9. The method according to claim 1 wherein said plurality of electrodes are arranged within a single detection chamber.

10. The method according to claim 1 wherein said plurality of electrodes are printed carbon ink.

11. The method according to claim 4 wherein said assay reagents are present within an assay domain defined by a dielectric layer on said electrodes.

12. The method according to claim 6 wherein:

said first, second and third electrodes having first, second and third electrical leads for supplying electrical energy to said electrodes; and

said flow cell being in fluid communication with an inlet conduit at least partially defined by exposed surfaces of said first and third electrical leads, wherein fluid in said inlet conduit is in electrical contact with said exposed surfaces,

the method further comprising the step of applying an inlet conduit interrogation potential between said exposed surfaces to determine the presence or composition of fluid in said inlet conduit.

13. The method according to claim 12 wherein said interrogation potential is of insufficient magnitude to induce electrochemiluminescence at said first or third electrodes.

14. The method according to claim 1, further comprising the steps of:

applying electrical energy between said third electrode and a fourth electrode of said plurality of electrodes; and

measuring an assay dependent signal at said fourth electrode.

15. An apparatus for performing a plurality of biochemical assays comprising:

a plurality of electrodes comprising at least one dedicated working electrode, at least one dual-role electrode and at least one dedicated counter electrode, said dedicated working and dual-role electrodes having deposited thereon an assay reagent,

wherein said dual-role electrode is configured to operate first as the working electrode and then as the counter electrode.

16. The apparatus according to claim 15, wherein said assay reagent is a binding reagent specific for an analyte of interest.

17. The apparatus according to claim 16 wherein said binding reagent is different for each of said dedicated working and dual-role electrodes.

18. The apparatus according to claim 15 wherein said plurality of electrodes are arranged within a flow cell, said flow cell having a flow cell path.

19. The apparatus according to claim 18 wherein said plurality of electrodes are arranged along said flow cell path.

20. The apparatus according to claim 15 wherein said dedicated counter electrode is adjacent said dual-role electrode and said dual-role electrode is adjacent said dedicated working electrode.

21. The apparatus according to claim 15 wherein said plurality of electrodes are arranged within a single detection chamber.

22. The apparatus according to claim 5 wherein said plurality of electrodes are printed carbon ink.

23. The apparatus according to claim 16 wherein said assay reagents are present within an assay domain defined by a dielectric layer on said dedicated working and dual-role electrodes.

24. The apparatus according to claim 18 further comprising:

dedicated working, dual-role and dedicated counter electrical leads for supplying electrical energy to said plurality of electrodes, wherein at least two non-adjacent electrical leads have an exposed surface located thereon;

an inlet conduit in fluid communication with said flow cell and at least partially defined by said exposed surfaces of said electrical leads, wherein fluid in said inlet conduit is in electrical contact with said exposed surfaces,

wherein the exposed surfaces are configured to apply an inlet conduit interrogation potential between said exposed surfaces to determine the presence or composition of fluid in said inlet conduit.

25. The apparatus according to claim 24 wherein said exposed surfaces are further configured such that the applied interrogation potential is of insufficient magnitude to induce electrochemiluminescence at the corresponding electrodes.

26. The apparatus according to claim 15 further comprising an optical detector for detecting luminescence generated at said dedicated working and dual-role electrodes.

27. The apparatus according to claim 15 further comprising a voltmeter for measuring potentials at said dedicated working and dual-role electrodes.

28. The apparatus according to claim 15 further comprising an ammeter for measuring electrical current at said dedicated working and dual-role electrodes.

29. A cartridge for conducting a plurality of assays, comprising:

a flow cell having an inlet, an outlet and a detection chamber, the inlet, detection chamber and outlet defining a flow path through the flow cell, said detection chamber comprising:

a plurality of electrodes wherein at least a first electrode has a first assay reagent immobilized thereon, said electrodes being arranged in a one-dimensional array along the flow path;

a plurality of electrical leads for supplying electrical energy to said plurality of electrodes;